Ty-Rap® Fastening solutions – Mounting bases

PEP ecopassport®
Product Environmental Profile

Registration number:	**ABBG-00935-V01.02-EN**	Drafting rules:	**PCR-ed4-EN-2021 09 06**
Contact information:	**oscar.sarmiento-penuela@ch.abb.com**	Supplemented by:	**PSR-0003-ed2.1-EN-2023 12 08**
Verifier accreditation number:	**VH44**	Information and reference documents:	**www.pep-ecopassport.org**
Date of issue:	**August-25**	Validity period:	**5 years**

Independent verification of the declaration and data in compliance with ISO 14025: 2006

Internal: ☐ **External:** ☒

The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)

PEPs are compliant with XP C08-100-1:2016 and EN 50693:2019 or NF E38-500:2022
The components of the present PEP may not be compared with components from any other program.

Document complies with ISO 14025:2006 "Environmental labels and declarations. Type III environmental declarations"

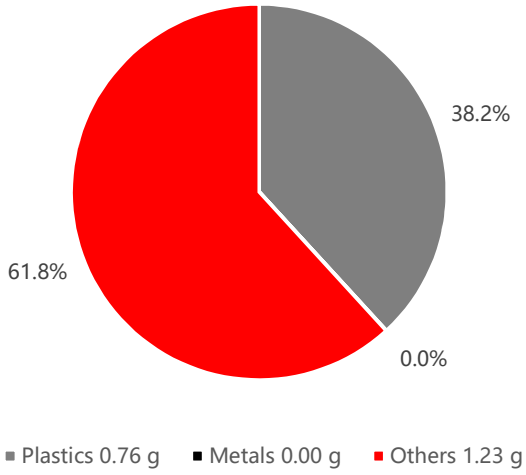
ABB Purpose & Embedding Sustainability

ABB is committed to perform the Life Cycle Assessment (LCA) of most of its products in order to obtain the PEP certification.
LCA evaluates the environmental performances and potential environmental impacts throughout a product's life cycle, from raw material to end of life, including manufacturing, transportation, distribution, and use.
It helps to identify opportunities to improve the environmental performance of products, establish strategic plans and priorities and create Environmental Product Declarations.

General information

Reference product	TC5344A
Description of the product	Ty-Rap® mounting bases are supports used to fix firmly other cable accessories as Ty-Rap® cable tie. Mounting bases ramped cable tie entries, for easier insertion of the cable tie.
Functional unit	The reference product of the Ty-Rap® mounting bases is TC5344A. The functional unit for TC5344A is to mount a cable or a tube at a point with a collar with a clamping capacity of the cable tie between 3 mm and 102 mm, for a reference lifetime of 20 years. The declared unit is referred to one piece of product.
Other products covered	List of the other products covered in this PEP is presented in the paragraph which concerned the extrapolation rules
Manufacturing address	Cabo Caribe Industrial Park Lot 32-34 Vega Baja PR 00693 www.new.abb.com/us

Constituent Materials



Total weight of reference product and packaging	**2.0**	**g**

Plastics as % of weight		**Metals as % of weight**		**Others as % of weight**	
Name and CAS number	Weight%	Name and CAS number	Weight%	Name and CAS number	Weight%
PA66	27.4			**Wood**	50.4
Synthetic rubber	5.4			**Cardboard**	11.4
LDPE	5.4				

The total mass of the reference product is 0.652 g , with an additional 1.335 g associated with packaging materials

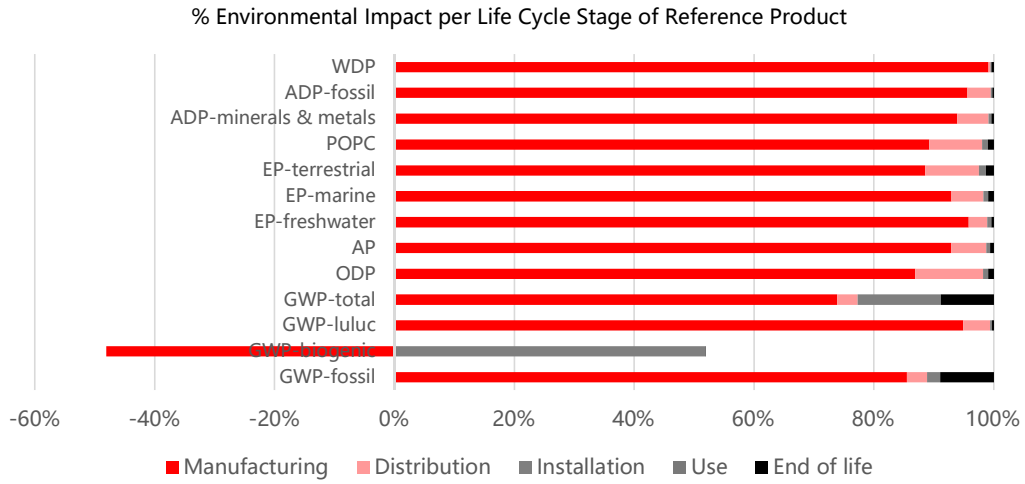
Additional Information

Manufacturing	The manufacturing stage includes the production of the product and its packaging, as well as transportation to the manufacturer's final logistics platform. Manufacturing processes are conducted at ABB's facility in Vega Bja, PR
Distribution	Transportation from ABB's manufacturing facility in Vega Bja, PR to distribution warehouses in Byhalia, Bromont, Phoenix, and NEDC is included. Distribution from warehouses to end users is based on product-specific transport data for the reference year. The reference product is distributed globally.
Installation	This phase includes the disposal of the product's packaging.
Use	No material or energy consumption occurs during the use phase. The product does not require maintenance.
End of life	The default end-of-life scenario specified in PSR-0003-ed2.1-EN-2023-12-08 has been adopted, assuming 100% incineration without energy recovery.
Benefits and loads beyond the system boundaries	Net benefits and loads beyond the system boundaries are modeled according to PCR-ed4-EN-2021 09 06 and EN 50693 standards

Environmental Impacts

Reference lifetime	20 years
Product category	Category: “Other cable management products” Subcategory: “Electronical installation mounting systems”
Installation elements	No additional elements needed during installation
Use scenario	No material or energy consumption occurs during the use phase. The product does not require maintenance.
Geographical representativeness	Global, 2022
Technological representativeness	Technological representativeness for primary data refers to the specific production processes. The technological coverage for each secondary process is specified in the metadata section of the ecoinvent database.
Software and database used	SimaPro 10.2 and ecoinvent 3.10
Energy model used	
Manufacturing	Manufacturing & storage US: 100% hydroelectric as reported in the Renewable Energy Certificate. The energy-related processes used are those included in the datasets selected.
Installation	The energy-related processes used for the inputs and end of life are t
Use	No energy consumption occurs during the use stage
End of life	The energy-related processes used for the inputs are those included in the datasets selected.

Common base of mandatory indicators



Environmental impact indicators

Indicator		Unit	Total	Manufacturing	Distribution	Installation	Use	End of life	Benefits
GWP	Total	kg CO2 eq.	1.76E-02	1.30E-02	5.98E-04	2.44E-03	0.00E+00	1.56E-03	0.00E+00
	Fossil	kg CO2 eq.	1.75E-02	1.49E-02	5.98E-04	3.77E-04	0.00E+00	1.56E-03	0.00E+00
	Biogenic	kg CO2 eq.	1.54E-04	-1.91E-03	5.95E-09	2.07E-03	0.00E+00	1.06E-07	0.00E+00
	Luluc	kg CO2 eq.	5.53E-06	5.25E-06	2.49E-07	1.70E-08	0.00E+00	1.51E-08	0.00E+00
ODP		kg CFC-11 eq.	8.19E-11	7.12E-11	9.26E-12	7.08E-13	0.00E+00	7.61E-13	0.00E+00
AP		H+ eq.	6.43E-05	5.97E-05	3.80E-06	3.74E-07	0.00E+00	4.07E-07	0.00E+00
EP	Freshwater	kg P eq.	1.45E-06	1.38E-06	4.46E-08	1.01E-08	0.00E+00	5.87E-09	0.00E+00
	Marine	kg N eq.	2.28E-05	2.12E-05	1.21E-06	1.78E-07	0.00E+00	2.21E-07	0.00E+00
	Terrestrial	mol N eq.	1.47E-04	1.30E-04	1.32E-05	1.75E-06	0.00E+00	1.93E-06	0.00E+00
POCP		kg NMVOC eq.	5.03E-05	4.48E-05	4.44E-06	4.82E-07	0.00E+00	5.04E-07	0.00E+00
ADP	Minerals & metals	kg SB eq.	2.94E-08	2.76E-08	1.55E-09	1.31E-10	0.00E+00	1.19E-10	0.00E+00
	Fossil	MJ	2.20E-01	2.10E-01	8.60E-03	5.89E-04	0.00E+00	4.82E-04	0.00E+00
WDP		m³ eq. depr.	1.28E-02	1.27E-02	4.24E-05	1.76E-05	0.00E+00	5.06E-05	0.00E+00

Resource use indicators

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of life	Benefits
PERE	MJ	3.21E-02	3.20E-02	1.06E-04	1.07E-05	0.00E+00	1.37E-05	0.00E+00
PERM	MJ	1.95E-02	1.95E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	5.16E-02	5.15E-02	1.06E-04	1.07E-05	0.00E+00	1.37E-05	0.00E+00
PENRE	MJ	1.70E-01	1.60E-01	8.60E-03	5.89E-04	0.00E+00	4.82E-04	0.00E+00
PENRM	MJ	4.98E-02	4.98E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	2.20E-01	2.10E-01	8.60E-03	5.89E-04	0.00E+00	4.82E-04	0.00E+00

Common base of mandatory indicators

Use of secondary materials, water, and energy resources

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of life	Benefits
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.03E-04	2.99E-04	1.25E-06	5.77E-07	0.00E+00	1.78E-06	0.00E+00

Waste category indicators

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of life	Benefits
HWD	kg	6.24E-07	5.58E-07	5.69E-08	4.48E-09	0.00E+00	4.90E-09	0.00E+00
N-HWD	kg	1.71E-03	9.76E-04	6.79E-04	3.10E-05	0.00E+00	2.38E-05	0.00E+00
RWD	kg	4.32E-08	4.11E-08	1.79E-09	1.48E-10	0.00E+00	1.76E-10	0.00E+00

Output flow indicators

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of life	Benefits
CfRu	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MfR	kg	3.84E-04	3.84E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MfER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Other indicators

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life	Benefits
Biogenic C-product	kg of C	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic C-packaging	kg of C	6.29E-04	6.29E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Optional indicators

Indicator	Unit	Total	Manufacturing	Distribution	Installation	Use	End of life	Benefits
Tot PE	MJ	2.71E-01	2.62E-01	8.71E-03	6.00E-04	0.00E+00	4.95E-04	0.00E+00
Efp	Dise inc	7.60E-10	6.95E-10	5.74E-11	4.63E-12	0.00E+00	2.86E-12	0.00E+00
IrHH	kBq U-235 eq	1.75E-04	1.66E-04	7.32E-06	5.99E-07	0.00E+00	7.00E-07	0.00E+00
ETX FW	CTUe	4.46E-02	3.87E-02	2.03E-03	7.62E-04	0.00E+00	3.17E-03	0.00E+00
HTX CE	CTUh	3.24E-11	2.85E-11	2.95E-12	5.41E-13	0.00E+00	4.22E-13	0.00E+00
HTX N-CE	CTUh	6.50E-11	5.15E-11	5.28E-12	3.39E-12	0.00E+00	4.75E-12	0.00E+00
IrLS	Pt	2.85E-01	2.77E-01	8.07E-03	2.82E-04	0.00E+00	1.92E-04	0.00E+00

Glossary

Environmental impact Indicators

GWP-total	Global Warming Potential total (Climate change)
GWP-fossil	Global Warming Potential fossil
GWP-biogenic	Global Warming Potential biogenic
GWP-luluc	Global Warming Potential land use and land use change
ODP	Depletion potential of the stratospheric ozone layer
AP	Acidification potential
EP-freshwater	Eutrophication potential - freshwater compartment
EP-marine	Eutrophication potential - fraction of nutrients reachin marine end compartment
EP-terrestrial	Eutrophication potential - Accumulated Exceedance
POCP	Tropospheric ozone creation potential
ADP-m&m	Abiotic Depletion for non-fossil resources potential
ADP-fossil	Abiotic Depletion for fossil resources potential
WDP	Water deprivation potential

Resource indicators

PENRE	Use of non-renewable primary energy excluding renewable primary energy resources used as raw material
PENRM	Use of non-renewable primary energy resources used as raw material
PENRT	Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials
PERE	Use of renewable primary energy excluding non-renewable primary energy resources used as raw material.
PERM	Use of renewable primary energy resources used as raw material
PERT	Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)

Secondary materials, water and energy resources		Waste category indicators	
SM	Use of secondary materials	HWD	Hazardous waste disposed
RSF	Use of renewable secondary fuels	N-HWD	Non-hazardous waste disposed
NRSF	Use of non-renewable secondary fuels	RWD	Radioactive waste disposed
FW	Net use of fresh water		

Output flow indicators		Optional indicators	
CfRu	Components for re-use	Tot PE	Total use of primary energy during the life cycle
MfR	Materials for recycling		
MfER	Materials for energy recovery	Efp	Emissions of Fine particles
EE	Exported Energy	IrHH	Ionizing radiation, human health
		ETX FW	Ecotoxicity, freshwater
		HTX CE	Human toxicity, carcinogenic effects
		HTX N-CE	Human toxicity, non-carcinogenic effects
		IrLS	Impact related to Land use / soil quality

Approach for extrapolation rules applied to a homogeneous environmental family

The PEP can cover products belonging to a homogeneous environmental family, even though they differ from the reference product. Therefore, the group of products must satisfy the following characteristics:

- same function;
- same product standard;
- similar manufacturing technology: the same type of materials and same manufacturing processes.

The product family satisfies these conditions, so extrapolation rules are applied following the PCR guidelines to assess the environmental impact of the products belonging to the family. The extrapolation rules are defined by the following steps:

- Analyse the products covered by the PEP belonging to the same homogenous family;
- Perform the LCA of a representative product of the homogeneous family;
- Identify and quantify the product parameters that vary between the various products of the homogeneous environmental family (i.e. dimensions, the weight of parts, materials, energy consumption, etc.).

Lastly, a sensitivity analysis was performed for each life cycle stage to identify which parameters of the ones selected are sensitive to environmental impacts to create extrapolation rules.

The parameters identified are listed below:

- product weight;
- packaging weight;
- packaging composition.

The representative product considered for the calculation of the extrapolation rules is TC5344A. This product is most representative for the sales.

The result of the sensitivity analysis show that product weight parameter, packaging weight parameter, packaging composition parameter are sensitive.

The products included in the product family and considered for the application of the extrapolation rules are presented in the following table.

Ty-Rap® Fastening solutions – Mounting bases				
SKU name	Weight of Product (kg)	Weight of Packaging (kg)	Weight of Pallet(kg)	Weight of Cardboard(kg)
TC5344A	6.52E-04	1.34E-03	1.00E-03	2.27E-04
TC5342A	3.31E-03	9.10E-04	3.18E-04	3.72E-04
TC368	4.12E-03	7.93E-04	4.23E-04	2.36E-04
TC150X150A-L	2.79E-03	1.79E-03	7.94E-04	5.81E-04
TC5347A	1.82E-03	9.10E-04	3.18E-04	3.72E-04
TC050X050A	3.10E-04	1.34E-03	1.00E-03	2.27E-04
TC050X050A-C	3.10E-04	7.79E-04	5.01E-04	1.13E-04
TC347	1.82E-03	1.34E-03	1.00E-03	2.27E-04
TC347A	1.82E-03	1.34E-03	1.00E-03	2.27E-04
TC342	1.82E-03	1.34E-03	1.00E-03	2.27E-04
TC342A	1.82E-03	1.34E-03	1.00E-03	2.27E-04
TC150X150	2.79E-03	7.93E-04	4.23E-04	2.36E-04
TC150X150A	2.79E-03	7.93E-04	4.23E-04	2.36E-04
TC200X200A	4.12E-03	7.93E-04	4.23E-04	2.36E-04
TC200X200A-L	4.12E-03	1.79E-03	7.94E-04	5.81E-04
TC344	6.52E-04	1.34E-03	1.00E-03	2.27E-04
TC344A	6.52E-04	1.34E-03	1.00E-03	2.27E-04
TC368A	4.12E-03	7.93E-04	4.23E-04	2.36E-04
TC5344	6.52E-04	1.34E-03	1.00E-03	2.27E-04

Extrapolation rules

The extrapolation rules are calculated based on the LCIA results of all the 6 products (reference product + variants), and the sensitivity analysis carried out for the extrapolation rules.

The influential parameters for calculating the LCIA impacts of the variants are product weight, packaging weight and pallet weight for the manufacturing stage. For the distribution stage the influential parameters are packaging and product weight; for installation stage, the influential parameters are pallet weight and cardboard weight; for end of life stage the influential parameter is product weight.

A multiple linear correlation between the LCIA impacts of the representative product and its variants is identified using these parameters. The most suitable equation is determined by considering the SimaPro impact results and the weights of several variables. These equations estimate the impacts for each SKU analyzed, with an average error error of <8% per impact category. To derive the best-fit equation, data were processed using Excel and the Python programming language. Each environmental indicator value is calculated using the following formulas.

- Manufacturing stage:

$$y = ax_1 + \mathrm{b}x_2 + \mathrm{c}x_3 + \mathrm{d}$$

where x1 = product weight
x2 = packaging weight
x3 = pallet weight

- Distribution stage:

$$y = ax_1 + \mathrm{b}$$

where x1 = product and packaging weight

- Installation stage:

$$y = ax_1 + \mathrm{b}x_2 + \mathrm{c}$$

where x1 = pallet weight
x2 = cardboard weight

- End of life stage:

$$y = ax_1 + \mathrm{b}$$

where x1 = product weight

The table above can be referenced for the components' weights and all their variants.

The coefficients' calculation for the use stage is not performed because this stage is not present in the Life cycle of the product and so there aren't impacts related to this phase.

The following tables report the linear coefficients (a, b, c, etc.) for each life cycle stage.

MANUFACTURING STAGE				
Impact category indicator	a	b	c	d
GWP-total	1.28E+01	-1.75E+01	1.18E+01	1.57E-02
GWP-fossil	1.25E+01	-1.64E+01	1.22E+01	1.58E-02
GWP-biogenic	2.29E-01	-1.13E+00	-4.80E-01	-6.81E-05
GWP-luluc	1.38E-03	5.27E-03	-3.81E-03	1.04E-06
ODP	2.37E-08	9.47E-08	-7.12E-08	-2.31E-12
AP	5.49E-02	-5.59E-02	4.20E-02	5.43E-05
EP-freshwater	9.22E-04	2.90E-04	-2.45E-04	5.97E-07
EP-marine	2.07E-02	-2.39E-02	1.77E-02	2.12E-05
EP-terrestrial	1.20E-01	-1.04E-01	7.96E-02	1.07E-04
POCP	3.77E-02	-2.37E-02	1.88E-02	3.16E-05
ADP-minerals & metals	1.40E-05	1.76E-05	-9.35E-06	2.80E-09
ADP-fossil	1.81E+02	-1.77E+02	1.30E+02	1.90E-01
WDP	1.25E+01	-1.76E+01	1.29E+01	1.46E-02
Efp	5.88E-07	-4.97E-07	4.06E-07	5.44E-10
IrHH	4.87E-02	2.23E-01	-1.58E-01	-1.28E-05
ETX FW	2.56E+01	-2.41E+00	4.83E+00	1.89E-02
HTX CE	2.12E-08	9.81E-09	-1.57E-10	1.27E-12
HTX N-CE	3.37E-08	1.60E-08	-1.12E-08	1.77E-11
IrLS	1.51E+01	1.12E+02	1.05E+02	1.11E-02
PERE	2.57E+01	8.69E+00	7.10E-01	2.75E-03
PERM	5.67E-01	7.65E+00	7.96E+00	8.76E-04
PERT	2.63E+01	1.63E+01	8.67E+00	3.62E-03
PENRE	1.42E+02	-1.47E+02	1.11E+02	1.47E-01
PENRM	3.95E+01	-2.96E+01	1.90E+01	4.24E-02
PENRT	1.81E+02	-1.77E+02	1.30E+02	1.90E-01
SM	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	2.93E-01	-4.11E-01	3.02E-01	3.42E-04
HWD	1.36E-04	1.09E-03	-8.90E-04	-1.13E-07
N-HWD	9.83E-01	1.95E-01	-8.23E-02	1.43E-04
RWD	1.22E-05	5.46E-05	-3.85E-05	-3.16E-09
CfRU	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MfR	5.90E-01	-6.98E-10	1.53E-09	-7.36E-13
MfER	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tot PE	2.07E+02	-1.61E+02	1.39E+02	1.93E-01
Biogenic Carbon-product	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic Carbon-packaging	1.84E-02	2.53E-01	2.50E-01	2.90E-05

DISTRIBUTION STAGE		
Impact category indicator	a	b
GWP-total	3.01E-01	4.47E-14
GWP-fossil	3.01E-01	-3.74E-13
GWP-biogenic	3.00E-06	5.44E-14
GWP-luluc	1.25E-04	-2.69E-13
ODP	4.66E-09	-2.77E-21
AP	1.91E-03	4.96E-13
EP-freshwater	2.24E-05	-4.01E-14
EP-marine	6.08E-04	4.25E-13
EP-terrestrial	6.66E-03	-5.44E-13
POCP	2.24E-03	-5.03E-13
ADP-minerals & metals	7.78E-07	-4.04E-19
ADP-fossil	4.33E+00	1.09E-12
WDP	2.13E-02	3.18E-13
Efp	2.89E-08	9.51E-22
IrHH	3.69E-03	2.15E-13
ETX FW	1.02E+00	-1.62E-14
HTX CE	1.48E-09	-2.24E-22
HTX N-CE	2.66E-09	-2.85E-22
IrLS	4.06E+00	-1.03E-12
PERE	5.31E-02	-2.40E-13
PERM	0.00E+00	0.00E+00
PERT	5.31E-02	-2.40E-13
PENRE	4.33E+00	-1.11E-12
PENRM	0.00E+00	0.00E+00
PENRT	4.33E+00	-1.11E-12
SM	0.00E+00	0.00E+00
RSF	0.00E+00	0.00E+00
NRSF	0.00E+00	0.00E+00
FW	6.31E-04	-1.94E-13
HWD	2.86E-05	2.91E-13
N-HWD	3.42E-01	1.88E-13
RWD	9.02E-07	-1.41E-19
CfRU	0.00E+00	0.00E+00
MfR	0.00E+00	0.00E+00
MfER	0.00E+00	0.00E+00
EE	0.00E+00	0.00E+00
Tot PE	4.38E+00	-2.31E-12
Biogenic Carbon-product	0.00E+00	0.00E+00
Biogenic Carbon-packaging	0.00E+00	0.00E+00

INSTALLATION STAGE			
Impact category indicator	a	b	c
GWP-total	1.69E+00	4.63E+00	-2.78E-04
GWP-fossil	6.74E-02	2.69E+00	-2.78E-04
GWP-biogenic	1.62E+00	1.94E+00	-5.34E-09
GWP-luluc	1.18E-05	2.95E-05	-1.39E-09
ODP	4.71E-10	1.34E-09	-6.30E-14
AP	2.47E-04	7.58E-04	-4.23E-08
EP-freshwater	8.32E-06	1.03E-05	-4.98E-10
EP-marine	1.17E-04	3.59E-04	-1.97E-08
EP-terrestrial	1.17E-03	3.55E-03	-2.09E-07
POCP	3.25E-04	9.47E-04	-5.47E-08
ADP-minerals & metals	9.08E-08	2.31E-07	-1.12E-11
ADP-fossil	4.18E-01	9.96E-01	-5.10E-05
WDP	7.96E-03	5.02E-02	-1.64E-06
Efp	3.42E-09	6.70E-09	-2.95E-13
IrHH	3.90E-04	1.16E-03	-4.96E-08
ETX FW	2.62E-01	2.52E+00	-6.67E-05
HTX CE	3.88E-10	8.80E-10	-4.40E-14
HTX N-CE	2.17E-09	7.31E-09	-4.08E-13
IrLS	2.05E-01	4.39E-01	-2.15E-05
PERE	6.83E-03	2.11E-02	-8.94E-07
PERM	0.00E+00	0.00E+00	0.00E+00
PERT	6.83E-03	2.11E-02	-8.94E-07
PENRE	4.18E-01	9.96E-01	-5.10E-05
PENRM	0.00E+00	0.00E+00	0.00E+00
PENRT	4.18E-01	9.96E-01	-5.10E-05
SM	0.00E+00	0.00E+00	0.00E+00
RSF	0.00E+00	0.00E+00	0.00E+00
NRSF	0.00E+00	0.00E+00	0.00E+00
FW	2.48E-04	1.71E-03	-5.32E-08
HWD	2.81E-06	1.01E-05	-5.84E-10
N-HWD	2.19E-02	5.26E-02	-2.70E-06
RWD	9.61E-08	2.89E-07	-1.23E-11
CfRU	0.00E+00	0.00E+00	0.00E+00
MfR	0.00E+00	0.00E+00	0.00E+00
MfER	0.00E+00	0.00E+00	0.00E+00
EE	0.00E+00	0.00E+00	0.00E+00
Tot PE	4.24E-01	1.02E+00	-5.19E-05
Biogenic Carbon-product	0.00E+00	0.00E+00	0.00E+00
Biogenic Carbon-packaging	0.00E+00	0.00E+00	0.00E+00

END OF LIFE STAGE		
Impact category indicator	a	b
GWP-total	2.40E+00	1.27E-13
GWP-fossil	2.40E+00	3.50E-13
GWP-biogenic	1.62E-04	1.64E-13
GWP-luluc	2.32E-05	-2.11E-13
ODP	1.17E-09	3.96E-23
AP	6.24E-04	2.12E-13
EP-freshwater	9.01E-06	-6.29E-14
EP-marine	3.38E-04	1.77E-13
EP-terrestrial	2.95E-03	-3.98E-13
POCP	7.73E-04	4.47E-13
ADP-minerals & metals	1.82E-07	-5.70E-21
ADP-fossil	7.39E-01	2.93E-14
WDP	7.76E-02	-1.56E-13
Efp	4.38E-09	2.29E-22
IrHH	1.07E-03	2.55E-13
ETX FW	4.85E+00	-3.49E-13
HTX CE	6.47E-10	2.80E-23
HTX N-CE	7.28E-09	4.93E-22
IrLS	2.94E-01	-2.56E-13
PERE	2.10E-02	-6.91E-14
PERM	0.00E+00	0.00E+00
PERT	2.10E-02	-6.91E-14
PENRE	7.39E-01	2.36E-13
PENRM	0.00E+00	0.00E+00
PENRT	7.39E-01	2.36E-13
SM	0.00E+00	0.00E+00
RSF	0.00E+00	0.00E+00
NRSF	0.00E+00	0.00E+00
FW	2.73E-03	-1.23E-13
HWD	7.51E-06	-1.35E-13
N-HWD	3.66E-02	-1.79E-13
RWD	2.71E-07	2.42E-20
CfRU	0.00E+00	0.00E+00
MfR	0.00E+00	0.00E+00
MfER	0.00E+00	0.00E+00
EE	0.00E+00	0.00E+00
Tot PE	7.60E-01	-6.59E-14
Biogenic Carbon-product	0.00E+00	0.00E+00
Biogenic Carbon-packaging	0.00E+00	0.00E+00

Comparability

EPDs published within the same product category, though originating from different programs, may not be comparable. Full conformance with a PCR allows PEP comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible.

Applicable product standards

Product technical and Certification specifications can be found in the product catalogue on ABB's website.

References

[1] PCR “PEP-PCR-ed4-EN-2021_09_06” - Product Category Rules for Electrical, Electronic and HVAC-R Products

[2] PSR-0003-ed2.1-EN-2023 12 08 - Specific rules for Cable management solutions.

[3] EN 50693:2019 - Product category rules for life cycle assessments of electronic and electrical products and systems

[4] ISO 14040:2006 - Environmental management -Life cycle assessment - Principles and framework

[5] ISO 14044:2006 - Environmental management - Life cycle assessment - Requirements and guidelines

[6] ecoinvent v3.10 (2023). ecoinvent database version 3.10 - (https://ecoinvent.org/)

[7] SimaPro Software version 10.2 PRé Sustainability

[8] UNI EN 15804:2012+A2:2019: Sustainability of constructions - Environmental product declarations (September 2019)

[9] 2B S.r.l, 2025, "Report LCA ABB_Mounting bases"

